

**THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

1. A method for maintaining filaments in position when
5 manufacturing composite parts through a filament winding
process, comprising the steps of:
 applying resin impregnated filament (16) onto an
 elongate mandrel (12); and
 winding yarn (32) onto the elongate mandrel (12)
10 overlying the resin impregnated filament (16), to maintain
the resin impregnated filament (16) in position and under
tension.
2. The method as defined in Claim 1, the steps being
15 sequentially repeated by applying alternating layers of resin
impregnated filament (16) followed by yarn (32) to maintain
each layer of resin impregnated filament (16) in position and
under tension.
- 20 3. The method as defined in Claim 1, collars (24) with
projecting spikes (26) being positioned in spaced relation on
the mandrel (12) to assist in maintaining filament
positioning and spacing, the filaments (16) extending between
the respective collars (24) with filament spacing being
25 maintained by segregating the filaments (16) with the
projecting spikes (26).
4. The method as defined in Claim 1, slotted grooves being
positioned in spaced relation on the mandrel (12) to assist
30 in maintaining filament positioning and spacing.
5. The method as defined in Claim 1, including the step of
wrapping a circumferential wrap of filament (16) around the
mandrel (12) at the end of each pass in order to anchor the
35 filament (16).
6. The method as defined in Claim 1, at least one ring (28)

being provided which is co-axial to and encircles the mandrel (12), the yarn (32) being positioned on a spool (30), which is mounted on the ring (28), the spool (30) orbiting the mandrel (12) to apply yarn (32) circumferentially to the
5 mandrel (12).

7. The method as defined in Claim 6, more than one ring (28) being provided.

10 8. The method as defined in Claim 6, the spool (30) being fixed in position on the ring (28) and the ring (28) rotating about its axis.

15 9. The method as defined in Claim 6, guides (33) being provided to guide the path of the yarn (32) as it leaves the spool (30).

10. The method as defined in Claim 9, the guides (33) being supported by a support arm.

20 11. The method as defined in Claim 1, the orientation of the filament being controlled by selectively rotating the mandrel (12).

25 12. The method as defined in Claim 1, the mandrel (12) being moved axially.

13. The method as defined in Claim 6, the at least one ring (28) being moved axially along the mandrel (12).

30 14. The method as defined in Claim 1, wherein at least one impregnation box (14) is provided to impregnate filament (16) with resin.

35 15. The method as defined in Claim 1, wherein guide rollers (20) are provided to control application of the filament (16).